

# FRAGMENTA FAUNISTICA

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***Formica cinerea fuscocinerea* FOR. in the Pieniny Mts;  
its untypical habitat and plesiobiosis with *Lasius flavus* (F.)  
(Hymenoptera, Formicidae)**

**Abstract:** Presented is the occurrence of *Formica cinerea fuscocinerea* FOR. in the Pieniny Mts, S Poland in a habitat not typical for this ant subspecies – a grassy mountain slope far from a river. The colonies nest under stones, usually in plesiobiosis with *Lasius flavus* (F.).

**Key words:** ants, *Formica cinerea*, social symbiosis, Poland.

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*Formica* (*Serviformica*) *cinerea* MAYR is a Euro-Caucasian species and an oligotope of dry habitats. These ants construct deep and widely spread underground nests, frequently connected into vast polydomous systems. Two of the four subspecies of *F. cinerea* occur in Poland, namely *F. cinerea cinerea* MAYR and *F. cinerea fuscocinerea* FOR., both in their typical regions and habitats. *F. cinerea cinerea* is a lowland form, it populates sunny sandy areas from sea dunes to inland ones as well as sparse light pine forests. *F. cinerea fuscocinerea* is a mountain form (strictly speaking, a foothill one) characteristic of open wide river terraces.

In Poland, *F. cinerea fuscocinerea* is recorded from Lower Silesia and the following mountain ranges: Western and Eastern Beskidy, Bieszczady, Pieniny and Tatras (CZECHOWSKI et al. 2001). Lower Silesia is the only region from where both subspecies have been recorded, yet in different habitats, of course (Fig. 1). *F. cinerea fuscocinerea* has not been found in the Sudeten Mts, although myrmecological faunistic studies have been carried out there (BANERT,

PISARSKI 1972). Until recently, gravelly or stony river terraces covered with scanty herbaceous vegetation were believed to be the only habitats in which the subspecies occurred in Poland (DLUSSKY, PISARSKI 1971, PISARSKI 1975). And solely from such localities these ants have been recorded in the Pieniny Mts, a region with a well-studied myrmecofauna (KOEHLER 1951, CZECHOWSKA 1976, WOYCIECHOWSKI 1985).

Yet in the Pieniny Mts, in 1998, we happened to find an untypical site of this subspecies on Mt Wdżar near Czorsztyn (UTM DV57). Numerous *F. cinerea fuscocinerea* colonies nested there under stones scattered over a grassy south-facing slope at 700–725 m above sea level, c. 2.5 km from the nearest meander of the Dunajec and c. 200 m above the level of its terraces. No less

interesting was the fact that almost always *F. cinerea fuscocinerea* nested, under one stone, together with *Lasius flavus* (F.), with colonies of these ants forming a pleisiobiotic relation in its most typical form.

Plesiobiosis is a rudimentary form of social symbiosis. It consists in close proximity of colonies of different species of social insects whose nests border on one another. However, foreign individuals make no contact, there is no biotic interdependence between them, and they are potentially hostile to one another. Plesiobiotic relations are entered, as a rule, by forms greatly differing ecologically and behaviourally, and thus usually distant taxonomically (WHEELER 1926, HÖLLDOBLER, WILSON 1990, see also CZECHOWSKI 1997, CZECHOWSKI, ROTKIEWICZ 1997, CZECHOWSKI, YAMAUCHI 1998, CZECHOWSKI, VEPSÄLÄINEN 1999a,b). The taxa under discussion are in relation to each other precisely like this. *F. cinerea fuscocinerea* are territorial, aggressive and predaceous ants, foraging on the surface of the ground and on overground portions of plants, even in tree canopies. *L. (Cautolasius) flavus* are non-territorial hypogoeic ants, trophobiotically associated with root aphids.

The above situation is probably the first known case of pleisiobiosis with *F. cinerea* taking part. *L. flavus* frequently enters such relations.

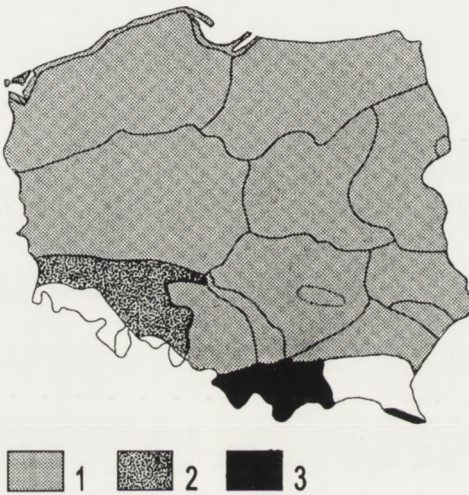


Fig. 1. Distribution of *Formica cinerea* in Poland (1 – *F. cinerea cinerea*, 2 – *F. cinerea cinerea* and *F. cinerea fuscocinerea*, 3 – *F. cinerea fuscocinerea*; for the division of the country into geographical regions see PISARSKI 1975).

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## STRESZCZENIE

[Tytuł: *Formica cinerea fuscocinerea* FOR. w Pieninach – nietypowe środowisko występowania i plezjobioza z *Lasius flavus* (F.) (*Hymenoptera, Formicidae*)]

Przedstawiony jest przypadek występowania *Formica cinerea fuscocinerea* FOR. w Pieninach w środowisku nietypowym dla tego podgatunku mrówek: na trawiastym stoku góry Wdżar z dala (ok. 2,5 km) od Dunajca i ok. 200 m powyżej jego tarasów. Kolonie *F. cinerea fuscocinera* gniazdowały tam pod z rzadka rozrzuconymi kamieniami, z reguły w plezjobiozie z *Lasius flavus* (F.).